

Chapter 1

DASB Organization And Functions

The Army's Force XXI Division represents a leap forward into the realm of 21st Century technology. The smaller Force XXI Division possesses greater lethality, quicker mobility as well as the combat service support (CSS) imperative of situational understanding (SA). Real time situational understanding means a complete, common relevant picture (CRP) of the battlefield for every commander. This information enables Force XXI commanders to quickly mass forces, allowing this division to defeat a larger, but less technologically advanced enemy.

The CSS structure's capability to project, receive, and support this force will directly impact the effectiveness of future military operations. The Force XXI battlefield imposes new challenges on support functions and leaders, as it calls for independent logistical systems and procedures. Using the Force XXI's enhanced digital logistical awareness and forecasting capabilities, CSS leaders at all levels must provide the foresight and responsiveness necessary to anticipate and maintain the division's operations tempo (OPTEMPO). Force XXI logistics will require new organization, new doctrine, as well as advanced distribution equipment and information technology.

The concept and organizational structures found in this document reflect a paradigm shift from a supply-based CSS system in Army of excellence (AOE) to an advanced distribution-based CSS system for Force XXI. Technology enhances this capability.

A distribution-based logistics system combines situational understanding capabilities with efficient delivery systems to form a seamless distribution pipeline. This pipeline represents "inventory in motion" and the CSS imperative of increased velocity. In contrast, static inventories comprise the current AOE supply-based system. Storing this static inventory, in large stockpiles at each echelon does not provide the mobility or flexibility required by the Force XXI maneuver commander. The Force XXI distribution-based system eliminates most stockpiles; substituting speed for mass. Logisticians control the destination, speed, and volume of the distribution system. With intransit visibility (ITV), total asset visibility (TAV), advanced materiel management, and advanced decision support system

technology, Force XXI logisticians will have access and visibility over all of the items within the distribution pipeline. This visibility allows logisticians to redirect, cross-level, and mass CSS assets more effectively in support of the maneuver commander's intent. The distribution-based systems gain speed through greater efficiency. Direct throughput from theater and corps to the brigade battlespace is the rule rather than the exception with distribution-based logistics. Throughput distribution bypasses one or more echelons in the supply system to minimize handling and to speed delivery to forward units. Supplies are tailored and packaged for specific supported units based on a specific time and location point of need, synchronized through support operation channels based on the combat commander's OPTEMPO. Advanced delivery platforms such as the palletized load system (PLS) and the container roll in/roll out platform (CROP), will use ITV/TAV to deliver directly from echelons above division (EAD) to points as far forward as possible. Extensive use of "hub and spoke" transfer nodes will reduce transportation and material handling requirements.

Multi-functional, modular units in direct support of the combat, combat support, and combat service support units form the cornerstone of this concept and represent the CSS imperative of an agile CSS force structure. Force XXI battlefield CSS operations will provide support as close to the point of need as possible. A common relevant picture coupled with information from the global combat support system-Army (GCSS-Army) will allow the Force XXI CSS commander to anticipate requirements and project support further forward than ever before. Division CSS organizations will be modular, mobile, and multi-functional. They will be adaptable to support force projection and velocity of combat operations in both linear and non-linear environments.

The creation of multi-functional logistics companies within the Force XXI FSB consolidates CSS organizational elements currently embedded within the AOE maneuver battalion with the direct support (DS) capability currently in the AOE Forward Support Battalion. Personnel and other soldier-related support functions including manning, sustaining soldiers through religious, legal, command information support, and funding through finance and resource management support are generally unaffected.

The consolidation of all classes of supply and maintenance within the forward support and base support companies serves as an example of enhanced efficiency and effectiveness. Modular, multi-functional

logistics companies and logistics command and control (C2) in direct habitual support allow the maneuver commander to focus on his core missions.

One of the nine principles of war described in FM 3-0 (100-5) as "...directing and coordinating the action of all forces toward a common goal or objective" is unity of command. Although "...coordination may be achieved by cooperation; it is best achieved... by vesting a single commander with the requisite authority to direct and to coordinate all forces employed in the pursuit of a common goal", such as combat service support.

Combat service support imperatives, principles, and characteristics will be discussed after the following description of the DASB's organization and functions.

DASB ORGANIZATION AND FUNCTIONS

1-1. The multifunctional DASB provides DS to the aviation brigade (AB) and the division cavalry squadron. The DASB may function in a highly dispersed manner, with some DASB elements close to the attack units and others near the brigade rear area. The DASB commander is the brigade commander's senior CSS operator. His battle staff manages and monitors sustainment through an array of digital information systems and other technological innovations. The DASB provides, or coordinates for all logistical support, and ties together the entire spectrum of supplies and services for the aviation brigade.

1-2. The maneuver commander, however "unencumbered", must be involved in synchronizing the maneuver of the DASB and its subordinate companies and attached elements with inbound shipments from echelons above division and brigade. The use of assured communications, digitization of all CSS echelons, digitization of battlefield distribution (BD) platforms, and lastly modular organization structures, give the DASB commander and brigade S4 the information dominance needed to tailor the CSS support package. Through real-time situational understanding, the brigade battle staff is able to make up-to-the-minute adjustments in its support requirements. The widespread use of enablers on the battlefield allows the DASB battle staff to anticipate changes in requirements and rapidly redirect assets or, if necessary, have a surge capability to provide seamless CSS to all levels of the AB.

1-3. The DASB supports the AB and the division cavalry squadron by providing or coordinating all classes of supply and maintenance. The DASB can function in a dispersed manner to support the

division cavalry squadron or AB when they are operating forward. The DASB may attach aviation and ground maintenance teams and fueling assets forward to augment the FSB, who then provide area support to the division cavalry squadron. The DASB does not have any combat health support (CHS) capabilities. Based on mission, enemy, terrain, troops, and time available and civilians (METT-TC), combat health support is provided by either the DSB or FSB medical companies to the DASB, AB and division cavalry squadron. The DASB contains a headquarters and supply company (HSC), a ground maintenance company (GMC), and an aviation maintenance company (AMC) (see Figure 1-1). The DASB maintains one day of operational fuel requirements for the AB, division cavalry squadron and the DASB.

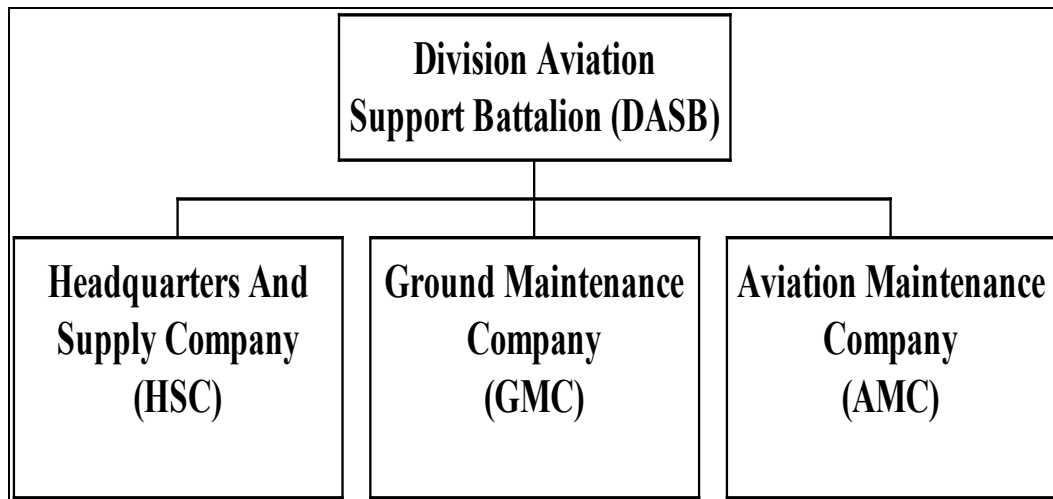


Figure 1-1. Division Aviation Support Battalion

1-4. The HSC consists of a battalion headquarters and a supply company. The battalion headquarters provides command, control and administration support for all organic and attached DASB units. The battalion headquarters plans, directs, and supervises support for the AB and division cavalry squadron. The supply platoon provides receipt, issue, and limited storage of Class II, III(P), IV, and IX (common and air) items in support of the AB and division cavalry squadron. It also receives and issues Class I and VI at the field ration issue point, and receives and issues Class VII as required. The supply platoon maintains the standard army retail supply system (SARSS-1) or global combat support system-Army (GCSS-Army). The Class III/V platoon provides bulk Class III and Class V support to its customers. It also operates a division rear aircraft refuel point for divisional and medical evacuation

(MEDEVAC) aircraft. The company also provides food service support for units organic and attached to the DASB.

1-5. The GMC consists of a company headquarters, a battalion maintenance platoon, and a direct support maintenance platoon. The GMC provides unit maintenance for all DASB non-air items and direct support maintenance for all AB, and division cavalry squadron non-air items, including track, turret, missile, automotive, communications-electronics, engineer, utility, power generation, and small arms.

1-6. The AMC company provides aviation intermediate maintenance to the division's aviation brigade, the division cavalry squadron, and corps medical aircraft operating in the division area. The AMC provides intermediate level avionics maintenance support, aircraft airframe, power plant, armament, and component repair. The Army Material Command's mobile maintenance support teams perform AVIM forward, and provide forward repair/recovery teams that perform on-site technical assistance. They can also provide backup aircraft recovery, retrograde of repairable aviation equipment by ground, and coordination for air recovery backup and rigging capability for recovery of supported aircraft. The AMC provides maintenance test flight evaluator support to supported aviation unit maintenance (AVUM) units. The AMC will form a collection and classification point for aircraft peculiar materiel and provide fueling and defueling service for supported aircraft while in the AMC. This unit performs unit maintenance on all organic equipment, except communications-electronics (CE) and communications security equipment.

1-7. The DASB is dependent for medical support on the area support medical company of the division support battalion, or the forward support medical company of the forward support battalion

FORCE XXI CSS IMPERATIVES AND PRINCIPLES

1-8. Force XXI CSS imperatives and principles meet Force XXI challenges by incorporating advanced information and transportation technology, streamlined CSS organizations, and a shift from the AOE supply-based CSS system to a distribution-based system. Force XXI CSS principles hinge on four integrated imperatives:

- Unity of command.
- Increased velocity.
- An agile CSS force structure.
- Situational understanding.

1.9. Force XXI CSS principles incorporate the **unity of command** imperative by centralizing distribution management and

establishing a single CSS operator as the focal point for CSS operations at each echelon. Unity of command for CSS facilitates the cross leveling, re-directing, and massing of CSS assets within and between echelons, and is an essential element of the distribution-based concept. The following key Force XXI principles relate directly to the unity of command imperative. Each Force XXI principle is followed by a definition and then a brief description of the principle:

- Single CSS operator.
 - The single CSS element at each echelon serving as the focal point for CSS; providing unity of command and effort; and providing centralized distribution management for CSS operations.
 - The single CSS operator provides centralized distribution management and the CSS assets required supporting its designated maneuver unit. This single CSS operator is responsible for establishing unity of effort; providing and/or coordinating CSS surge capability where required to support the maneuver commander's intent. The single CSS operators designated for each echelon are:

<u>Echelon</u>	<u>Single CSS Operator</u>
Maneuver Battalion	Forward Support Company (FSC)
Maneuver Brigade	Forward Support Battalion (FSB)
Division	Division Support Command (DISCOM)
Corps	Corps Support Command (COSCOM)
Theater	Theater Support Command* (TSC)

* Army Theater CDR's decision

- Surge capability.
 - The capability to mass CSS resources at a point and time on the battlefield to weight the battle logistically by maximizing combat power at the decisive point as determined by the supported commander. Surge capability is enabled by flexible, modular organizational capabilities and by fused logistics and operational information. Surge capability may often be employed to mass tailored CSS resources as various supported units pass through the different stages of the halt, move, combat continuum.

- Unity of command for CSS enhances CSS surge capability. Combat service support commanders may, for example, surge maintenance assets to meet priority readiness, surge fuel assets prior to a counter-attack, or surge other commodities to make up for disruption in the lines of communication from corps. In practice, at the tactical level, a forward support battalion commander may, because he has centralized command and control over the brigade's CSS assets, compensate for anticipated or realized shortfalls by cross-leveling or redirecting idle or under-utilized assets from other forward support company's (FSCs). He may direct other units within the FSB to a different FSC if CSS requirements exceed an individual forward support FSC's capabilities. If additional required support is not available at the brigade level, the FSB commander may call upon higher echelons within the CSS command and control structure for support. Higher echelon CSS commanders enjoy the same surge capabilities with centralized command and control over CSS assets.
- Centralized distribution management.
- A single distribution manager at each echelon that leverages information technology to coordinate, prioritize, and synchronize material management and movement control operations to maximize the distribution pipeline's capability to throughput units and follow-on sustainment.
 - Centralized distribution management is essential to efficient and effective distribution system operations. It involves the integrated end-to-end visibility and control of the distribution system capacity and CSS pipeline flow by distribution managers at each echelon. Under a distribution-based CSS system, designated distribution managers at each CSS echelon manage distribution operations, and coordinate and synchronize CSS flow in accordance with the commander's priorities to maximize the throughput to units and follow-on sustainment. The distribution manager has functional oversight of the synchronization of materiel management, maintenance, and movements control center operations at each echelon. Distribution managers at each echelon have the asset and intransit visibility required to optimize the distribution system within their echelon. Advanced information systems such as the movement tracking system (MTS), the global combat support system-Army (GCSS-Army), the combat service support control system (CSSCS), and advanced planning and optimization (APO) decision support tools provide this capability. The visibility over the CSS pipeline, coupled with the APO decision support tools, allows distribution managers to direct or divert assets enroute, and shift assets quickly in order to

meet changing distribution requirements. Centralized distribution management gives the commander the ability to quickly and effectively influence the distribution system. Centralized distribution management relies extensively on situational understanding for success.

1-10 **Increased velocity** refers to the time required to move supplies, equipment, and capability from the strategic base through the distribution system to the end user. Time is critical for a force projection Army. Increased velocity has made reductions in the CSS battlefield footprint, in terms of personnel, equipment and supplies possible. The increased velocity concept relies on effective command and control provided by unity of command coupled with situational understanding. The following key Force XXI principles relate directly to increased velocity.

- Distribution-based CSS.
 - A distribution-based CSS system leverages advanced planning and optimization (APO) tools to forecast requirements, plan and control distribution operations, obtain visibility of intransit stocks, combined with limited stocks at storage locations, and velocity and speed of distribution to support and sustain Army operations.
 - Distribution-based CSS leverages information, force structure designs, technological enablers, and command and control relationships to move the Army away from its traditional dependence upon echeloned stockpiles to a system capable of delivering the “right stuff, at the right time, to the right location”. This ability, combined with increased speed of movement and responsiveness throughout the system, will allow the Army to eliminate the large “just-in-case” stockpiles we have relied on in the past. However, distribution-based CSS does not eliminate the need for or the use of stockpiled inventory. Distribution-based CSS uses anticipation and visibility of the inventory moving through the distribution pipeline, in effect making the distribution pipeline into another warehouse, to limit, but not eliminate, stockpiled inventories.
- Throughput to forward areas.
 - Leveraging configured loads, containerization, information, force structure design, technological enablers, and C2 relationships to deliver sustainment from the operational level directly to the customer or its direct support unit; bypassing intermediate, general or direct support units.
 - Whenever possible, national strategic-level CSS elements will use throughput to prepare resources for direct, time definite delivery to a supply support activity (SSA)/tactical assembly area (TAA) in an area of operations (AO). Throughput distribution bypasses one or more echelons in

the supply system to minimize handling and speed delivery forward. A distribution-based CSS system emphasizes the use of containerization (within material handling equipment (MHE) constraints), to include palletization and packaging, to accommodate the AO and improve velocity. Velocity is achieved by the throughput of resources from the sustaining base to tactical-level support organizations. Direct throughput relies on unity of command and situational understanding.

- Minimize load handling.
 - Leveraging configured loads, containerization, information, force structure design, technological enablers, and C2 relationships in order to reduce the number of times sustainment is handled by multiple echelons and support units between the strategic provider and the ultimate customer.
 - In Force XXI, our goal is to minimize material handling, trans-loading and storage requirements to improve velocity throughout in the distribution pipeline. New transportation technology such as the palletized loading system (PLS), load handling system (LHS), container roll-in, roll-out platforms (CROP), and the "slip sheet" significantly reduce handling requirements over break-bulk methods. For example, with full off road capabilities, and no MHE requirements for loading or off loading flatracks of supplies, both the PLS and LHS are capable of delivering configured loads directly from echelons above division to the end user without any trans-loading or materiel handling requirements.
- Configured loads.
 - A configured load is a single or multi-commodity load of supplies built to the anticipated or actual needs of a consuming unit thereby facilitating throughput to the lowest echelon, METT-TC dependent. Whenever and wherever possible, configured loads will leverage the efficiencies of containerization and capabilities of CROP platforms. Configured loads are not, by definition, combat loads or basic loads though it is likely they may contain individual items that comprise all or part of either. There are three types of configured loads: Strategic configured loads (SCL), mission configured loads (MCL), and unit configured loads (UCL).
 - Configured loads of all types are an essential element of distribution-based logistics. Successful implementation of configured loads requires situational understanding and the ability to make appropriate forecasts at various points

on the planning time continuum. The intent of configured loads is to: a) increase throughput; b) minimize handling; c) reduce footprint; and d) physically speed the flow of supplies to the consumer. The types of configured loads, their purpose and uses are described below:

⇒ SCL: A configured load built outside of the theater of operations in CONUS, or sanctuary, to anticipated requirements of a consuming unit. Strategic configured loads leverage the robust capabilities of the sustaining base to conduct resource intensive configuration missions thereby minimizing the logistics footprint in a theater of operations that would otherwise be required to perform those missions.

It is essential that these loads be configured to suit the needs of the consuming unit and not merely for the convenience of the source of supply or the distribution system. Typically, SCLs will not be built for a specific named unit or destination but rather for a "type unit" conducting a particular "type" mission (e.g. armor company attack or an engineer battalion supporting a brigade movement to contact) in the theater of operations. In addition, replenishments for consolidated SSAs should be SCLs in which case the loads are configured to meet the combined expected demands of that corps supply support activity's (CSSA's) customers. This replenishment philosophy is applicable to any commodity.

The distribution manager at the operational level uses information in the operational plan (task organizations, phases, postures, etc.) to anticipate the quantity and type of SCLs that are likely to be required throughout the planning process. These demands are communicated to the sustaining base with sufficient lead time to maximize the use of strategic sealift. The requirements are continuously updated as the operations plan changes over time. As SCLs near the theater of operations, predominantly by sea, the distribution manager at the operational level leverages current situational understanding to assign destinations to the SCLs in order to facilitate rapid port clearance.

In most cases, because of their anticipatory nature, SCLs can not exactly meet a consuming unit's requirement but rather satisfy the unit's needs to a reasonable confidence level. Accordingly, SCLs can not be the sole source of replenishment for most customers. Also, there will need to be some consideration for retrograde and reconfiguration of unused SCL components which will be addressed

later. Consumption and equipment usage data must be collected over time to continuously obtain information with which to make more accurate forecasts of SCL configurations and requirements.

- ⇒ MCL: A configured load with all of the characteristics of a SCL except that it is built inside a theater of operations for a specific mission, unit or other purpose (e.g. an artillery raid, emergency resupply, etc.). A MCL will normally be configured using resources (personnel, equipment and supplies) found in a hub in the corps or theater area. Occasionally, a MCL may be configured from retrograded materiel not consumed from a previously distributed SCL (doing so may reduce the demand for SCLs in the strategic pipeline). It will not normally be configured from one or more SCLs.
- ⇒ UCL: A configured load built to the known requirements of a consuming unit. These loads are normally built in a corps forward hub for a specific FSC to deliver directly to the consuming unit. Unit configured loads are built in response to actual requisitions or as determined by the FSC support operations officer as materiel needed to satisfy immediate requirements (e.g. Class IX for a CRT or Class I for the FSC to prepare meals). Typically a UCL will form the basis of a scheduled delivery LOGPAC that may consist of some combination of SCLs, UCLs and the UCL including bulk fuel and water.

- Scheduled delivery.
 - A fundamental distribution planning parameter established as a component of each echelon's distribution plan. Scheduled delivery involves the movement of sustainment from the supporting organization to the supported unit at agreed upon time intervals.
 - Distribution managers at each echelon, in concert with the supported unit, will establish scheduled delivery times for routine replenishment. The quantity delivered must be tailored as much as possible to only that which is needed by the supported unit and should not exceed it in order to ensure support to other units and optimize delivery resources. Typically, the quantities of each delivery will differ based upon the supported units' OPTEMPO and distribution system's ability to respond. Generally, this would include "push" items such as Class III(B) and Class V. Items that the maneuver unit requests may also be sent on scheduled delivery runs, provided time definite delivery standards (see time definite delivery below) are achieved. Scheduled deliveries may be established for

individual commodities, such as for bulk POL and operational rations. For example, the scheduled delivery to a DSB from the corps support group (forward) might be 0600 and 1800 hrs daily. Scheduled deliveries facilitate scheduling main supply route (MSR) utilization, receiving operations at the supported unit, and synchronization of effort throughout the distribution system.

- Time definite delivery (TDD).
 - A fundamental distribution planning parameter, established as a component of each echelon's distribution plan, TDD establishes order ship time (OST) within which specified commodities requested by the supported unit must be delivered. Additionally, it deals with the consistency the distribution system delivers given resources within established OST, and serves as the metric to measure the distribution system's performance.
 - Time definite delivery is a commitment between the CSS manager and the supported commander and specifies OST within which specified commodities requested by the supported unit must be delivered. The CSS manager recommends these OSTs, based on METT-TC, for the supported commander's concurrence. The commander responsible for both the supporting and supported organizations establishes the TDD as a part of the overall distribution plan. Different TDD parameters for a specific commodity may be established for different customer units as deemed appropriate by the commander. For example, the corps distribution plan establishes the TDD parameters within which corps will deliver each major commodity to its customers, the FSBs as an example. The division distribution plan would establish TDD parameters for deliveries from division support units such as the DSB to supported units such as the ADA battalion.
 - Time definite delivery parameters are normally expressed in terms of hours or days for each major commodity. Establishing these OST involves making trade off between responsiveness, i.e., time and speed, stockage levels, and the length of lines of communication. If the commander wants to establish shorter TDD schedules, he will have to accept larger stockage levels forward on the battlefield and/or shorter lines of communication, with an inherent loss of flexibility and battlefield agility. However, if the commander is willing to accept longer TDD schedules, he will enjoy the greater flexibility and battlefield agility that comes with fewer stocks forward and/or longer lines of communication. Another example is the TDD for bulk Class III(B) resupply from corps to a FSBs logistics release point (LRP) which has been established as 18 hours. Corps established this specific TDD parameter

based upon the corps commander's operational plans, METT-TC situation and constraints, the supported unit's requirements and desires, and overall corps concept of support. If the FSB requires a Class III(B) delivery other than its normal scheduled delivery, the FSB's commander and planners know that they can expect delivery within 18 hours of their request and plan accordingly. TDD is directly linked to both situational understanding and an agile CSS force structure.

1-11. **An agile CSS force structure** is one that has a relatively small footprint, and does not encumber the maneuver commander with large stockpiles of supplies or large numbers of combat service support personnel on the ground. The key to agility is to place on the ground only those CSS assets that are truly needed; no more or no less. The following key Force XXI principles relate directly to an agile CSS force structure:

- Modular design.
 - A force structure design parameter used by TRADOC force designers to create company level force structure designs wherein each major company sub-element possesses a cross section of the total company's capabilities, thus enhancing the commander's ability to tailor CSS force structure to the mission and requirements.
 - When a sub-element of a company design is modular, it has the C2 and support structure organic to it, or readily available from the parent company, to deploy alone into a theater and stand alone, or plug into a headquarters already in theater. Modular functional or multi-functional companies with modular multi-functional platoons, teams or sections, when used to create tailored force packages (see tailorable force packages below) can reduce the CSS footprint in an area of operations.
- Tailorable force packages.
 - An operational planning consideration where CSS organizations and units are customized through the use of modular units and sub-units (platoon, team or section) to produce the required CSS capabilities without adding unnecessary, redundant, or non-value adding units, sub-units, or elements to the task organization.
 - The operational commander uses the modular force structure at his disposal to create CSS force structure tailored to meet the commander's requirements at each echelon without burdening the commander with unnecessary CSS force structure. For example, an early entry CSS company sized task force might be tailored using a platoon from a cargo transfer company, a platoon from a medium truck company, and a platoon from a

quartermaster supply company. Each platoon would bring with it a slice of the appropriate support structure from its parent company in order to sustain itself.

- Split-based operations.
 - Leveraging force structure designs, advanced automation, information, and communications capabilities to enable a unit to perform its mission in support of the warfighter with a small forward element deployed to the theater of operations, while the balance of the unit remains outside of the theater of operations in a sanctuary area.
 - Split-based operations occur when a function is performed through coordination between elements working in theater and elements working out of the theater. Split-based operations are ideal for management and command and control organizations that do not have to be in theater to perform their function. New information and communications technology makes split-based operations possible. For example, a corps level materiel manager does not have to be in theater to perform his function. Corps materiel managers could process requests sent back to CONUS from the theater. Communications and information technology would allow this material manager to cut a release order and send it to a SSA within theater. Split-based operations capabilities can significantly reduce CSS force structure within the theater of operations.
- Contractors on the battlefield.
 - Leveraging contractors to bridge the gap between required capabilities and actual force structure availability within the theater of operations. Contractors may be employed, subject to METT-TC, throughout the AO and in virtually all conditions. Contractors are categorized in FM 100-10-2 contracting support on the battlefield as:
 - ⇒ Theater Support Contractors: Theater support contractors support deployed operational forces under pre-arranged contracts or under contracts awarded within the mission area, by contracting officers serving under the direct contracting authority of the theater principal assistant responsible for contracting (PARC). Theater support contractors provide goods, services, and minor construction, usually from the local vendor base, to meet the immediate needs of operational commanders.
 - ⇒ External Support Contractors: External support contractors provide support to deployed operational forces that is separate and distinct from either theater support or systems contractors. They may be pre-arranged contracts or contracts awarded during the contingency itself to support the mission. Contracting

officers who award and administer external support contracts retain unique contracting authority deriving from organizations other than the theater PARC or systems offices under program managers (PM) or Army materiel command (AMC).

⇒ System Contractors: Systems contractors support deployed operational forces under pre-arranged contracts awarded by project managers (PMs) and Army Material Command (AMC). They support specific materiel systems throughout the system's life cycle during both peacetime and contingency operations. The systems include, but are not limited to, weapons systems, aircraft, command and control infrastructure, and communications systems.

- Lessons learned from military operations throughout our history indicate that contracting and outsourcing can be effective force multipliers. Contracted capability can extend existing Army capabilities and provide alternative sources of supplies and services. Use of contractors may reduce the personnel, equipment, and supplies that must be deployed to support a specific operation. Contractors do not replace force structure. They augment Army capabilities and provide an additional option for meeting support requirements. To the extent they are used, they will be incorporated into the force structure as force multipliers, but they will not displace military assets within that force structure. Their use may reduce the size of the Army force required to support a specific operation, but they will not permanently replace force structure.
- Replace forward/fix rear.
 - Replacing line replaceable units (LRUs) or modules instead of attempting to repair the LRUs or modules by leveraging advanced prognostic and diagnostic tools, support equipment, and training. The LRUs or modules are then retrograded to higher levels of maintenance for repair and return to the distribution system.
 - Force XXI field maintenance operations are characterized by lean, modular, and enabled maintenance units focused on maximizing combat power. The velocity at which future field maintenance operations must be performed, Force XXI distributed operations, the capabilities of battlefield distribution, and expected gains in diagnostics and prognostics facilitate our ability to fix equipment forward through the replacement of LRU or component assemblies.

Replace forward means a soldier performs "on system" maintenance. "On system" refers to replacing components or sub-components at the point of repair,

breakdown site or unit maintenance collection point (UMCP). Maintainers normally diagnose down to the major component failure. He then replaces that component and returns the system to operational condition. Based on METT-TC, the soldier may diagnose and replace sub-component items depending on the availability of tools, parts, and time. An example of a replace function would be the replacement of a full-up power pack (FUPP). If a serviceable FUPP is available, the maintainer replaces the major assembly. If the FUPP is not available, the maintainer might swap out a serviceable engine from an unserviceable FUPP with a bad transmission.

Repair rear means that soldiers perform "off system" maintenance. "Off system" refers to those actions taken to return components and sub-components of weapon systems to serviceable condition. These repair actions take place at designated places throughout the battlefield. Corps maintenance units may have the capability to repair certain LRUs and/or assemblies for major weapons systems they support. Corps component repair companies or special repair activities in the corps or theater area repair other components and assemblies as determined by sustainment maintenance managers. A repair function at the corps or theater level would be the rebuild of a tank engine or other major assembly.

- Multi-capable maintainer (MCM).
 - A mechanic trained to perform organizational and direct support level maintenance on the M1 Abrams tank and the M2/3 Bradley fighting vehicle system (BFVS). This mechanic has a broad, but shallow range of skills designed to enable him to replace LRUs or modules to rapidly return a vehicle to mission capable status.
 - This concept supports the concept combined organizational and direct support maintenance by providing maintainers capable of performing both the organizational level tasks as well as the on-board direct support level tasks on the M1 Abrams tanks and the M2/3 BFVS. It maximizes the FSC's ability to provide field maintenance to the maneuver battalion and reduces inefficiencies apparent with the separation of the organizational and direct support levels of maintenance. As a result of the implementation of Abrams and Bradley systems mechanics, maintenance on wheeled vehicles,

M113, M981, M88, and MLRS performed by the 63E, 45E, 63T, and 45T have been realigned to MOS 63B/S, 63Y, or 45K as appropriate.

- Combination of organizational/DS maintenance.
 - Unifying organizational and direct support (DS) level maintenance responsibilities and capabilities into one organization, the Division XXI FSC, to focus maintenance leadership, management, technical expertise, and assets under a single CSS operator ensuring maintenance can be planned, allocated, and swiftly executed when and where needed to satisfy the commander's requirements.
 - Efficiency in maintenance management and effectiveness of maintenance operations are maximized when unit and direct support maintenance operations are collapsed into one level. This concept eliminates the loss of time and loss of job continuity associated with the transition of unit level job orders to DS job orders and vice versa. Consolidated maintenance enables a greater capability to dispatch more effective maintenance capabilities forward because of centralized control over and access to more capabilities. The concept pools maintenance assets under a single CSS operator for maintenance, the maintenance control officer (MCO). It also brings together maintenance leadership and management such that maintenance support is planned, resourced, executed when and where needed, with a unified focus, in support of a common mission and objective. Enablers such as the MCM, forward repair system (FRS), and advanced diagnostics and prognostics give the combat repair teams (CRTs) the ability to execute this concept. The CRTs have the right people, with the right tools and test equipment to provide field maintenance forward on the battlefield and rapidly return combat systems to the fight.

1-12. **Situational understanding** refers to the logistician's complete picture of the friendly situation, the enemy situation, and the CSS situation through the use of advanced, seamless information technology. The following key Force XXI principles relate directly to situational understanding:

- Common operating picture.
 - Ability to view the same logistics and operational data at all echelons in near real time to provide commanders and logistics managers the identical battlefield picture.
 - Leveraging force structure designs, advanced automation, information, and communications capabilities to fuse

operational and logistics data to create a common operating picture of the battlefield, both tactically and logistically, for commanders and logisticians at all echelons from the tactical to the strategic level, which in turn facilitates optimal logistical operations. Commanders and distribution managers at all levels must have access to the same information at the same time in order to have unity of command and unity of effort. The Force XXI seamless information network combined with intransit visibility and integrated standard army management information systems (STAMIS) provides a common operating picture.

- Intransit visibility.
 - Leveraging advanced automation, information, and communications capabilities to track cargo and personnel while enroute from origin to destination.
 - Visibility is the most essential component of distribution management. In fact, distribution managers dedicate most of their work to gaining and maintaining visibility of all the various assets, processes, and capabilities throughout the distribution pipeline. Why is visibility so important? As summarized from FM 100-10-1, "Visibility is a positive indicator that the distribution pipeline is responsive to customer needs." Experience has shown that Army leaders must be confident in the supporters ability sustain them. Timely and accurate visibility information provides logisticians necessary information to distribute assets on time thus maintaining high confidence levels. Visibility is based on a continuum of CSS data from the sustainment base into and through the distribution processes of the distribution system (factory to foxhole). Visibility must begin at the point where materiel starts its movement to the theater of operations, be that a depot or commercial vendor or a storage facility in another theater or war reserve stockpile. The information must be digitized and subsequently entered into the necessary CSS information systems. The next critical element to visibility is the capability to dynamically update that source data with updates from subsequent CSS systems as to the transport, storage, maintenance, or supply status of that particular item/shipment until it is received at the ultimate consumer location. The information must be accessible to all users regardless of the service or echelon of command requiring the data.
- Integrated STAMIS.
 - The consolidation of previously separate, such as stovepiped, functional information systems into a single common operating environment (COE) that allows common usage of information between functions.

- An integrated STAMIS is defined as one that incorporates multiple types of functionality within a single system and can share database information between functionalities. Global combat support system-Army is an example of an integrated STAMIS; designed to include the functions of manning, arming, fixing, fueling, moving, and sustaining. The system will establish interfaces with other CSS automated systems in order for users to have access to the maximum amount of information with the minimum amount of data entry. The GCSS-Army's management module will act as the data warehouse and will work to tie the integrated STAMIS together.
- Seamless information network.
 - The ability to autonomously exchange large volumes of information across data platforms such as GCSS-Army and CSSCS, and between multiple echelons of command from the tactical to the strategic level.
 - A seamless information network is defined as an autonomous data exchange between systems and levels of command. It provides the fusion of operational and CSS data. A seamless information network provides the common operating picture and intransit visibility (ITV) that makes distribution-based CSS operations and split-based operations possible. It also enhances the security of CSS assets by providing situational understanding of the enemy situation and friendly situation across levels of command as well as across battlefield operating systems.
- Near real time (NRT) information.
 - The ability to autonomously exchange large volumes of information within an information network as the data is created at the point of origination.
 - Near real time refers to the ability to capture events in the information network as they are happening; providing the logistician the capability to act almost immediately to the changing situation.

CSS CHARACTERISTICS

1-13. A changing environment has diminished the probability of a prolonged, large-scale conventional war. However, the potential for numerous global actions on a smaller, regional scale has increased. At the same time, available resources are declining.

1-14. In response to these changes the Army has become a force projection rather than a forward-deployed Army. Stability operations and support operations will consume much of the Army's resources and energy. Supporting the Army of today and in the future will require CSS personnel to work faster and smarter.

1-15. The tenets of Army operations - agility, initiative, depth, versatility, and synchronization are basic to successful operations. They also establish the framework for organizing CSS. An effective and efficient CSS system allows the Army to operate in accordance with (IAW) these tenets. Such a system has several fundamental characteristics as discussed in FM 3-0 (100-5) and FM 4-0 (100-10). These logistics characteristics are anticipation, integration, continuity, responsiveness, and improvisation.

1-16. For all the changes that technology and force redesigns have brought, one thing remains true, that success in battle is dependent upon the unity of effort between the tactical operation and logistics operations. Now, more than ever, the logistics community will succeed or fail by how well the CSS operators on the battlefield understand and adhere to the following logistics characteristics:

- Anticipation.
- Integration.
- Continuity.
- Responsiveness.
- Improvisation.

1-17. **Anticipation** of CSS requirements is made possible by the enhanced situational understanding provided by secure communications and knowledge-based information systems. The DASB carries limited supplies. To properly provide support, the DASB leadership must anticipate future requirements and missions by understanding the tactical commander's plan and by staying aware of current developments. By using situational understanding, the DASB ensures that the required support has been planned for and requested from EAD.

1-18. CSS requirements must be **integrated** into the scheme of maneuver. The decrease in on-hand stockage levels greatly increases the DASB's dependence on EAD for resupply. This requires that the CSS planners at all levels clearly identify all support requirements early in the planning cycle. This ensures that the required support is fully integrated into the division's scheme of maneuver.

1-19. Support must be **continuous**. The division requires continuous CSS to perform its mission. Any break in logistics operations can diminish its combat power. CSS elements continuously both sustain combat forces and replenish their own capabilities. Positive control of CSS assets should be enhanced through more accurate and timely reporting with the use of combat service support control system (CSSCS). The DASB must provide continuous support to the maneuver and slice units and maintain positive control of all its CSS operations.

1-20. **Responsiveness** is the ability to meet changing requirements, often on short notice, as operations evolve in

unexpected directions. It is also the ability to respond to changes in the maneuver commander's intent and changes on the battlefield without interrupting the flow of support. This must be done with little or no advance notice and as the combat operations are being carried out. The DASB must maintain maximum flexibility and be ready to respond quickly, often with a task-organized structure to meet force-projection requirements.

1-21. CSS personnel try to anticipate all support requirements and build a CSS structure. **Improvisation** is often necessary to provide continuous and responsive support. capable of responding to any eventuality. However, it is inevitable that situations will arise in which even tailored resources will not be available to meet requirements if leaders apply them as outlined in doctrine or support plans. Therefore, support personnel must be prepared to seek innovative solutions to problems. If established support procedures are not providing the support required by the force, CSS personnel must be willing and capable of modifying and devising new ones that meets the needs. If required assets are not available through the normal system, they must be creative in acquiring them. Extraordinary means may be necessary. This is especially true at the tactical level where short time frames often require greater use of improvisation.

1-22. Because of technological advancements, the anticipated OPTEMPO on the battlefield will increase. Through technology the CSS operators will have massive amounts of tactical and logistical information at their fingertips. They will have access to the same common relevant picture of the battlefield as the maneuver elements. Their challenge will be to sift rapidly through the information, assess its effect, and apply the CSS characteristics to provide the right sustainment to the right place at the right time to support the tactical effort. The challenge will be that much greater, for the DASB commander and battle staff, as the technology and force redesign have given subordinate units a level of autonomy not seen in CSS structures of the past.